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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/483,110	01/14/2000	Faisal Haq	M-7998-US	7946

33031 7590 06/01/2006

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ART UNIT	**PAPER NUMBER**
2616	

DATE MAILED: 06/01/2006

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/483,110
Filing Date: January 14, 2000
Appellant(s): HAQ ET AL.

Brenna A. Brock
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 03/09/2006 appealing from the Office action mailed 08/23/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,509,123	Dobbins et al	4-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-6,16-21,31-43 and 52-57 are rejected under 35 U.S.C. 102(b) as being anticipated by Dobbins et al (USP 5,509,123) (hereinafter "Dobbins").

Regarding **claim 1**, in accordance with Dobbins reference entirety, Dobbins discloses a method (*Fig. 4 and col. 7, line 55 and thereinafter*) comprising:

receiving at least one packet (*col. 7, lines 55-56 and thereinafter*); and

disposing of the received at least one packet in response to a walk of a Hash Table (*cache or AVL tree*) (*col. 7, line 63 and thereinafter; col. 9, lines 32-33 and thereinafter and col. 11, lines 10-14*) (*note: CACHE or AVL tree and hash codes recited thereat constitute the claimed "Hash Table"*), wherein the Hash Table is balanced, the Hash Table is configured to store Binary Comparison Trees, and the Hash Table is configured to encode an Access Control List (*access list entries are kept in AVL tree discussed at col. 11, lines 10-14 and AVL tree does not have a predetermined size and may grow freely discussed at col. 11, lines 10-14. AVL is an acronym for two famous Russian Mathematicians invented the famous AVL tree and widely recognized as a balanced tree. Thus, the AVL tree is inherently balanced*).

Regarding **claim 2**, in addition to features recited in base claim 2 (see rationales discussed above), Dobbins further discloses wherein said disposing of the received at least one packet in response to a walk of the Hash Table further includes: constructing a hash table index value from one or more bit positions, within the received at least one packet, pointed at by one or more pointers of a Hash-Table-Balancing Bit Selection

Vector; and walking a binary comparison tree associated with the constructed hash table index value (*at col. 10, lines 10-12, it is disclosed setting an entry is done by hashing the source and destination addresses into one byte hash code and linking the entry into a "bucket" quickly accessible by that code and at col. 11, lines 19-20 and thereinafter, it is discussed access list, valid entries are linked across the tree in their sequence order for fast scan during packet filtering. The discussion thereat reads on the claimed limitations*).

Regarding **claim 3**, in addition to features recited in base claim 2 (see rationales discussed above), Dobbins further discloses converting (*keeping*) the Access Control List (*access list*) to the Hash Table (*AVL tree and hash codes constitute the claimed "Hash Table"*) (*col. 11, lines 12-13*).

Regarding **claim 4**, in addition to features recited in base claim 3 (see rationales discussed above), Dobbins further discloses wherein said converting the Access Control List to the Hash Table further includes: creating a binary comparison tree for at list one access control list rule in the Access Control List (*col. 11, lines 12-13 and thereinafter, it is disclosed Forwarding Access (FAC) keeps access list entries as nodes in an AVL tree corresponds to the claimed limitations*).

Regarding **claim 5**, in addition to features recited in base claim 4 (see rationales discussed above), Dobbins further discloses wherein said creating a binary comparison tree for at least one Access Control List rule further includes: creating at least one node, having at least one miss branch and at least one match branch, for at least one packet header field utilized by the at least one Access Control List Rule in the Access

Control list (*col. 11, lines 12-53, it is discussed an entry in the access list begins with four common leaves managed in Forwarding Access (FAC) to include ID, Sequence, Matches and Permission for use in packet filtering corresponds to the claimed limitations*).

Regarding **claim 6**, in addition to features recited in base claim 3 (see rationales discussed above), Dobbins further discloses wherein said converting the Access Control List to the Hash Table further includes: inserting at least a part of a binary comparison tree constructed for at least one Access Control List rule into a hash table entry pointed at by a hash table index (*col. 11, lines 18-19 and thereinafter, it is disclosed within each access list, valid entries are also linked across the tree in their sequence order for fast scan during packet filtering corresponds to the claimed limitations*).

Regarding **claims 16-21**, the claims call for a system having elements that mirror the method steps of method claims 1-6. Thus, they are rejected by the same rationales discussed above.

Regarding **claims 31-33**, the claims call for a system having elements that mirror the method steps of method claims 1-6 as specified in base claim 16 as embodied in signal bearing media. Thus, they are rejected by the same rationales discussed above.

Regarding **claims 35-43**, the claims call for a computer program having codes that mirror the method steps of method claims 1-6. Thus, they are rejected by the same rationales discussed above.

Regarding **claims 52-57**, the claims call for a network engine having elements that mirror the method steps of method claims 1-6. Thus, they are rejected by the same rationales discussed above.

(10) Response to Argument

Pertaining the rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Dobbins, the appellant argues that the prior art of Dobbins does not expressly or inherently describe the "Hash Table" recited in claim 1, which is configured to "store Binary Comparison Trees" as well as "encode an Access Control List." The arguments have been noted and a specific response to each argument is provided below.

In response to the argument the Dobbins fails to teach the "Hash Table", Examiner respectfully disagrees for the following reasons:

First, there is no specific definition for the claimed term "Hash Table" in the specification or in the claim. Therefore, it is subject to Examiner's broadest reasonable interpretation consistent with the specification.

Second, Dobbins does not use the term "Hash Table". However, Dobbins does use the term "*cache memory*" storing "*hash codes*" (col. 30-33). Therefore, the Office Action has equated the "*cache memory*" storing "*hash codes*" to constitute the claimed "Hash Table". Thus, in contradistinction to the appellant's argument, Dobbins does indeed disclose what is claimed as the "Hash Table".

In response to the argument the Dobbins fails to teach the "Hash Table" recited in claim 1, which is configured to "store Binary Comparison Trees", Examiner respectfully disagrees for the following reasons:

First, as discussed above, Dobbins does indeed disclose what is claimed as the "Hash Table". Moreover, at col. 11, lines 12-13, Dobbins also discloses a class base Forwarding Access (FAC) keeps access list entries as nodes in an AVL tree. AVL is an acronym for two famous Russian Mathematicians, Adelson-Velskii and Landis and the AVL trees are widely recognized as balanced binary search trees.

Second, since there is no specific definition for the term "*Binary Comparison Trees*" in the specification or in the claim, it is again subject to the Examiner's broadest reasonable interpretation consistent with the specification. Thus, Dobbins discloses "*cache memory*" storing "*hash codes*" (constituting the claimed "Hash Table") and the base class FAC keeps access list entries as nodes in an AVL tree (constituting the claimed "configured to store Binary Comparison Trees"). Thus, in contradistinction to the appellant's argument, Dobbins does indeed disclose what being claimed as the "*Hash Table is configured to store Binary Comparison Trees*".

In response to the argument the Dobbins fails to teach the "Hash Table" recited in claim 1, which is configured to "*encode an Access Control List*", Examiner respectfully disagrees for the following reasons:

First, as discussed above, Dobbins does indeed disclose what is claimed as the "Hash Table". Moreover, at col. 11, lines 12-13, Dobbins also discloses a class base Forwarding Access (FAC) keeps access list entries as nodes in an AVL tree. AVL is an acronym for two famous Russian Mathematicians, Adelson-Velskii and Landis and the AVL trees are widely recognized as the balanced binary search trees.

Second, since there is no specific definition for the term "*encode an Access Control List*" in the specification or in the claim, it is again subject to the Examiner's broadest reasonable interpretation consistent with the specification. Thus, Dobbins discloses "*cache memory*" storing "*hash codes*" (constituting the claimed "Hash Table") and the base class FAC keeps access list entries as nodes in an AVL tree (constituting the claimed "*encode an Access Control List*"). Thus, in contradistinction to the appellant's argument, Dobbins does indeed disclose what is claimed as the "Hash Table is configured to store *an Access Control List*".

Pertaining the rejection of claim 2 under 35 U.S.C. § 102(b) as being anticipated by Dobbins, the appellant argues "*cited portions of Dobbins do not teach or suggest that the ID (or any other feature described in the cited portion of Dobbins) is in any way constructed from (or even related to) a received packet. Accordingly, this portion of Dobbins clearly neither teaches nor suggests constructing an index value from one or more bit positions within a received packet.*"

In response, Examiner respectfully disagrees for the following rationales.

Contrary to the appellant's argument, at col. 10, lines 10-12, Dobbins discloses setting an entry is done by hashing the source and destination addresses into one byte hash code and linking the entry into a "bucket" quickly accessible by that code. Moreover, at column 11, lines 12-13, Dobbins discloses FAC keeps access list entries in an AVL tree. In addition, in the same column, lines 19-20, Dobbins also discloses entries are linked across the tree in their sequence order for fast scan during packet filtering. Moreover, in the same column, lines 30-40, Dobbins further discloses entry

begins with ID and sequence, the first two indexes unique to the entry wherein the ID is the identifier groups entries into a particular list and the sequence number keys the order of entries in a given access list for packet filtering. The recitation thereat clearly anticipates the claimed limitation in the present condition.

Pertaining the rejection of claim 2 under 35 U.S.C. § 102(b) as being anticipated by Dobbins, the appellant also argues "*the cited portions of Dobbins do not teach or suggest pointers that point at the bit positions, within the received at least one packet,* as recited in claim 2."

In response, Examiner respectfully disagrees and asserts the Dobbins, as clearly pointed out in the Office Action, does indeed disclose the disputed limitation as following:

At col. 10, line 12, Dobbins discloses the entry is linked into a "bucket" quickly accessible by the hash code and at col. 11, lines 19-20, Dobbins also discloses entries are also linked across the tree in their sequence order for fast scan during packet filtering. The linking of entry is done using pointer or pointers. This feature is very well recognized in the art of packet forwarding or IP look up and also disclosed by Dobbins. At col. 9, lines 10-30, Dobbins discloses each protocol FAS registers itself with the forwarding table for that protocol and this is done by registering its network address and masks along with a pointer to its base class with the internal forwarding table. Thus, in contradistinction to the appellant's argument, the recitation thereat clearly anticipates the claimed limitation in the present condition.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Primary Examiner Frank Duong

May 22, 2006

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